

Claims 1-4 and 6-10 stand rejected under 35 U.S.C. 102(b) as being unpatentable over Bloomfield et al. (US 3,649,360), in view of Schirmer et al. (US 4,488,866) and Gelsey (US 7,108,933). While Bloomfield et al. discloses a hydrogen generation system that uses a metal hydride such as calcium hydride, lithium hydride, magnesium hydride, sodium hydride, or potassium hydride with water. Applicants respectfully disagree with the Examiner's argument that the wicking system must be under pressure. The reference specifically states "[u]se of a dilute electrolyte to replenish water vapor serves the function of providing long life and minimize the loss of water from the reservoir through normal evaporation through vent 28 when the system is not in use. . . . The vent to this cavity 28 may be provided with a small opening 30 to further minimize water vapor evaporation losses." (col. 3, lines 21-29) This indicates that the construction of the water reservoir is at atmospheric pressure and is not pressurized. The water is drawn into the anode and cathode chambers by the capillary action of the wicks. The wicks are shaped to provide high surface areas for the water to evaporate into the anode and cathode chambers to diffuse to the hydride beds. It is the capillary action that drives the water movement.

With respect to the Schirmer et al. reference, this reference is not at all from related art, but is directed to the removal of pollutants, especially NO_x and SO_x, in a combustion effluent stream. The Schirmer et al. reference is nonanalogous art. In *Union Carbide Corp. v. American Can Company*, 220 U.S.P.Q. 584, 588 (Fed. Cir. 1984), the court held "we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved." The Schirmer reference is for burning high nitrogen-high sulfur fuels and preventing the emission of NO_x and SO_x above permitted levels. This is not in the field of hydrogen generation for fuel cells, and the carbon dioxide removal in the reference (col. 22, lines 2-6 and 26-30) rejects the carbon dioxide from the system through line 200. The present invention is closed and cannot reject the carbon dioxide from the system, so the carbon dioxide is adsorbed and held until the cartridge is spent. But, even assuming arguendo that one would have known of this art, Schirmer does not overcome the deficiency of Bloomfield et al. with respect to the closed system having a pressurized water compartment.

Claims 5, 11 and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bloomfield et al., Schirmer et al., and Gelsey as applied to claim 1 above, and in further view of Hockaday et al. (US 6,554,400 B2). Bloomfield et al. teaches a water impermeable membrane (col. 4, lines 39-42). However, Bloomfield teaches a water impermeable membrane for storage, and not a semi-permeable membrane for purposes of allowing the passage of hydrogen. The operation of Bloomfield teaches that the membrane must be punctured to operate (col. 4, lines 44-45) and inhibit operation when left intact. This is contrary to the operation with a semi-permeable membrane. Hockaday et al. provides for a flexible membrane to control hydrogen production by contacting the catalyst, disposed on the membrane, with the fuel wetted surface. This provides for a continuous production of hydrogen by starting and stopping the hydrogen flow when the amount of hydrogen decreases such that the membrane will bring the catalyst in contact

with the fuel wetted surface. This is much different from the invention according to claim 11, where the bladder is impermeable and flexible, but has a gas under pressure within the bladder. This provides a means to maintain a liquid compartment under pressure, and can allow a user to have the compartment oriented in any position. The bladder keeps the gas segregated and prevents the gas from exiting the outlet port of the liquid compartment, while maintaining the liquid under pressure such that there is a positive force to drive liquid out of the compartment when the compartment outlet port is open. Hockaday et al. teaches a flexible diaphragm containing the membrane, but this is within the protective case 8. In contrast, claim 12 of the present invention provides for an elastomeric seal between the fuel cell cartridge and the electronic device to which the fuel cell cartridge will be attached, which is indicated in that the elastomeric seal is on an external face of the housing.

In summary, claims 1-12 remain in the application. Remarks have been made pointing out the differences between the present invention and the prior art references traversing all of the Examiner's rejections and objections. Accordingly in view of the remarks, applicants assert that claims 1-12 meet all statutory requirements and respectfully request allowance of all pending claims. If the examiner believes it would expedite prosecution of the above identified application, he is cordially invited to contact applicants' attorney at the below listed telephone number.

Respectfully submitted,



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AEG/sgb

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